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Republic of the Philippines
Department of Education
REGION I

DEC 09 2024

REGIONAL MEMORANDUM
No. 1148 s. 2024

INVITATION TO JOIN THE KIBO ASIAN TRY ZERO-G (ATZG) 2025 BY THE PHILIPPINE SPACE AGENCY (PSA)

To: Schools Division Superintendents

1. In reference to letter dated from the Philippine Space Agency (PSA) dated December 5, 2024, the Japan Aerospace Exploration Agency (JAXA) in collaboration with the Philippine Space Education and Scholarship Division shall be conducting the Kibo Asian Try Zero (ATZG) 2025 Competition on March, 2025 (exact date and place to be announced).

2. The activity aims to allow students to propose experiments to be performed in a zero-gravity environment aboard the Kibo module of the International Space Station (ISS).

3. The competition is open to students enrolled in Philippine institutions. Participants can join individually or in teams. Selected winners will have their experiments conducted by a JAXA astronaut and will also get a chance to visit the Tsukuba Space Center in Japan to witness the live demonstration and meet astronauts.

4. For more information, all concerned may contact the Space Education and Scholarship Division through email at sesd@philsa.gov.ph with the subject *Asian Try Zero G 2025: Inquiry*. Attached is the guidelines of the activity.

5. For information, dissemination and guidance.

TOLENTINO G. AQUINO
Director IV

SCHOOL DIVISION OFFICE
DEPED VIGAN CITY
12 DEC 2024
RELEASED
BY:

Encl.: As stated
Reference: Letter from Philippine Space Agency dated DEcember 5, 2024
To be indicated in the Perpetual Index
Under the following subjects:

COMPETITIONS

CLMD/jdcjr/RM_KiboAsianTryZero-G(ATZG)2025
December5, 2024

December 12, 2024

To: Public Elementary and Secondary School Heads

For information and guidance. Attention is invited to paragraph No. 3 of the Regional Memorandum for the qualifications.

VILMA D. EDA, CESO V
Schools Division Superintendent

Address: Mena Crisologo St. corner Rivero St., Brgy. IX, Vigan City, Ilocos Sur
Telephone No: (077) 722-20-23 / (077) 632-05-33
Email Address: vigan.city@deped.gov.ph
Website: www.depedvigancity.com

Your Feedback is important to us. Visit this link ***bit.ly/SDOViganCityCSM***

Republic of the Philippines
Department of Education
REGION I

REGIONAL MEMORANDUM
No. 1668 s. 2024

INVITATION TO JOIN THE KIBO ASIAN TRY ZERO-G (ATZG) 2025 BY THE PHILIPPINE SPACE AGENCY (PSA)

To: Schools Division Superintendents

1. In reference to letter dated from the Philippine Space Agency (PSA) dated December 5, 2024, the Japan Aerospace Exploration Agency (JAXA) in collaboration with the Philippine Space Education and Scholarship Division shall be conducting the Kibo Asian Try Zero (ATZG) 2025 Competition on March, 2025 (exact date and place to be announced).

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Encl.: As stated
Reference: Letter from Philippine Space Agency dated DEcember 5, 2024
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CLMD/jdcjr/RM_KiboAsianTryZero-G(ATZG)2025
December5, 2024

Outlook

Invitation to Join the Kibo Asian Try Zero-G (ATZG) 2025Dr.

From PhilSA Space Education and Scholarships Division <sesd@philsa.gov.ph>
Date Thu 12/5/2024 10:22 AM
To DEPED I ILOCOS REGION <region1@deped.gov.ph>

Dear Dr. Aquino,

Greetings from the Philippine Space Agency!

We are excited to inform you about an opportunity for Filipino students to participate in the Kibo Asian Try Zero-G (ATZG) 2025. This competition, organized by the Japan Aerospace Exploration Agency (JAXA) in collaboration with PhilSA, allows students to propose experiments to be performed in a zero-gravity environment aboard the Kibo module of the International Space Station (ISS).

The competition is open to students enrolled in Philippine institutions up to the postgraduate level. Participants can join individually or in teams. Selected winners will have their experiments conducted by a JAXA astronaut and will also get a chance to visit the Tsukuba Space Center in Japan to witness the live demonstration and meet astronauts.

The deadline for submission is on **3 January 2025**.

Interested students may submit their proposals through this link.

To learn more, kindly refer to the following resources:

1. Guidelines
2. Videos of past experiments
3. Available items
4. Proposal form
5. Proposal form sample

PH experiments conducted in the ISS during previous ATZG contests

1. 2022 ATZG: "Rotation of Dumbbell-shaped Objects in Space" by Mr. William Kevin L. Abran of the University of the Philippines Los Baños (UPLB)
2. 2023 ATZG: "Oloid's Movement in Microgravity" by Paul Anton Mahinay of the Rizal Technological University (RTU)
3. 2023 ATZG: "Effectivity of Elastic Resistance Band Exercise when performed in Zero-Gravity" by Gabriel John Guila, Dianne Cristine Cabiedes, Sean Matthew Castaneda, Franz Joshua Corpuz, Jose Ernest Guila, Arniel Kurt Macalla, Lee Andrew Medina, Giorgione Parrera, and Ace Gabriel Pega of the Bataan National High School

Should you have any questions, please feel free to contact sesd@philsa.gov.ph with the subject '[Asian Try Zero G 2025]: Inquiry'.

Thank you very much.

Best regards,

Pauline

Space Education and Scholarships Division
Philippine Space Agency
29th Floor, Cyber One Building, 11 Eastwood Ave., Bagumbayan, Quezon City

Philippine Space Agency

Asian Try Zero-G 2025 Application Guidelines

Looking for experiments to try out in space!!

November 1, 2024

1. Introduction

Asian Try Zero-G 2025 allows agencies from member countries/region to participate in the Kibo-ABC (Asia Beneficial Collaboration through Kibo Utilization) initiative that utilizes the Kibo Japanese Experiment Module on the International Space Station (ISS). Each participating agency, which acts as the point of contact (POC), will publicly seek proposals for experiments and select candidate themes from their respective countries/regions. All the participating agencies will then select the experiments together, and selected experiments will be carried out aboard Kibo. JAXA is the POC in Japan.

*See the video of Asian Try Zero-G 2023: 2023 (Astronaut Furukawa)

2. Application Information

Asian Try Zero-G 2025 is calling for themes related to simple physics experiments that will be carried out in the Japanese Experiment Module Kibo.

2-1. Application Summary

1. Ideas for visually confirming physical phenomena.
2. Describe the hypothesis/scientific basis as mathematically or logically as possible.
3. The only tools that can be used in the experiment are those that have been used in past Asian Try Zero-G experiments. For details, please refer to section 3.

2-2. Key Points

- Please propose an experiment that has never been conducted before (a new experiment) or an experiment that has been conducted in the past but has been further developed or improved. Please refer to the "Past Experiment Reports" (below) and "Attachment-1_Video List" for examples of previous experiments.
  https://humans-in-space.jaxa.jp/en/biz-lab/kuoa/tryzerog/
- Please make sure that your proposal is written in a way **that is easy for anyone to understand.** If the content is too complicated, there is a possibility that the theme selectors will not understand the purpose of the experiment. If necessary, it is also possible to supplement the experimental process and hypothesis using videos and diagrams. Please refer to section 7 for information on how to write a proposal.

3. Application Requirements

A total of 9 themes will be adopted across all Kibo-ABC participating countries/region. Please note that the number of themes adopted may change depending on the content of the

selected themes.

1) You can apply as an individual or as part of a group.
2) The activity must be completed inside Kibo.
3) No special tools required, or you can only use tools that can be used in the ISS.
   a. Stationery (Paper, pen, scissors, ruler, binder clip, Ziploc bag, etc.)
   b. Tools (screwdriver, wrench, tweezers, tape, rubber gloves, etc.)
   c. Simple tools that have been used in the past (See Attachment-2_Available Items).
      *Depending on the situation, the aforementioned items may not be available.
   d. The items listed in Attachment-2 can also be used in combination with each other.
4) **The activity should be completed in 10 minutes.** Please clearly and concisely explain the procedures.
   *You can also submit your application with a video showing how to carry out the experiment.
   *The time required for operations on orbit is about **twice as long** as the time required for the same operations on the ground.
5) As a rule, only experiments can be carried out by one crew member. However, proposals that would require two crew members will be considered.
6) The whole process will be recorded with a high-resolution camera. The high-resolution images are downlinked to the ground and distributed to the proposers.
   *The video distributed may only be used for educational purposes at the educational institution to which the proposer belongs. If you would like to use it for other purposes, please consult JAXA. Also, if you are using images of astronauts, please consult JAXA.
   Example:
   - Use at school cultural festivals, etc. (no permission required)
   - Use at academic conferences outside the school, use of images featuring astronauts (permission required)
7) Please keep the following in mind when preparing your material for the presentation externally. In addition, please allow JAXA to confirm the materials before submitting them.
   a. The results have to be indicated as obtained through participation in the Asian Try Zero-G 2025.
   b. The materials should be sent to JAXA for pre-confirmation before submission. (It takes approximately 10 days for confirmation.)
8) You should inform JAXA if you are interviewed or featured in a newspaper, TV, or other media.
9) Proposals that are deemed to be linked to the financial interests of specific groups or organizations will not be accepted. Furthermore, the activities of Asian Try Zero-G cannot be used for advertising or publicity.

4. Eligibility

Students, up to postgraduate, (individuals or teams) must be enrolled in schools in Kibo-ABC countries/region*1 that are participating in Asian Try Zero-G *2.
To be eligible to apply in Japan, you must either be a Japanese citizen or a foreign national living in Japan (if you have Japanese citizenship, you can also apply if you are living overseas).

*1 Kibo-ABC Member countries/region (in alphabetical order) Australia, Bangladesh, Indonesia, Japan, Malaysia, Nepal, New Zealand, Republic of the Philippines, Republic of Korea, Singapore, Taiwan, Thailand, United Arab Emirates, Vietnam
Kibo-ABC URL: https://humans-in-space.jaxa.jp/en/biz-lab/kuoa/

*2 Asian Try Zero-G 2025 Participating countries/region (as of November 2024) Australia, Bangladesh, Japan, Republic of the Philippines, Singapore, Taiwan, Thailand, United Arab Emirates. Participation from other countries is being coordinated. Please check the official website for the latest participating countries/region.
Asian Try Zero-G : https://humans-in-space.jaxa.jp/en/biz-lab/kuoa/tryzerog/

5. Schedule

January 2025	Initial selection in each country/region
March 2025	Final selection
December 2025 - February 2026	Experiments conducted on orbit (Dates TBA)
May 2026	Wrap-up Session

* The schedule is subject to change without prior notice.
* Ask about the proposal deadline for the agency / local secretariat in your country/region.

6. Points to Consider

There are cases where experiments cannot be carried out on the ISS/Kibo due to safety concerns or restrictions on the activities of astronauts. Check the following points when proposing an idea, and make sure that none of them apply.

1) The following activities are considered to be unsafe onboard the ISS/Kibo:
   - Use of dangerous materials/objects
   - Release of large amounts of water (1 liter or more) inside Kibo's cabin
   - Release of gases that cannot be processed on the ISS
   - Scattering of tiny objects such as bolts, nuts, pieces of paper, and powders
   - Spinning an object with a large mass at high speed
   - Handling of fragile objects (glass, etc.)
   - Handling of objects with sharp edges

2) The following activities are considered to be impractical onboard the ISS/Kibo:
   - Long hours of work
   - Any action that could lead to infringe on the rights and privacy of crew members
   - Stopping the air circulation in the cabin for a long time
   - Blocking astronaut emergency escape routes (Closing hatches, etc.)

7. How to Write a Proposal

Please refer to the Attachment-4 sample and fill in the following information in the Attachment-3 proposal form.
Please write your proposal in English, as it will be reviewed internationally.

1) Applicant affiliation
2) Title
3) Summary of the proposed experiment (approx. 200 words)
   Background, purpose, experiment process, predicted results, discussion, etc.
4) Hypothesis/Theory
   a) Hypothesis
   b) Schematic diagram
   c) Mathematical/theoretical supposition/scientific basis

5) Items required for implementation
6) Experiment Procedure
   Please also include the estimated time for each step.
7) Optional: Photo of the applicant (If you wish to be photographed with the astronaut, your photo will be sent up to the ISS and a commemorative photo taken in Kibo together with the astronaut(s). Please note that the photo will be made public.)
   * Please make sure to **provide easy-to-understand** explanations of the hypotheses, theories and experimental procedures of your experiment, using diagrams and supplemented videos, etc. Also, if you are sharing a video as supplementary material, please change the file name to the name of the experiment.

8. Submitting the Proposal

- Please submit your proposal (in English) and any supporting documents to the local secretariat.
  For applicants in Japan, please submit your proposal here (Japanese).
- **Deadline: Please check the deadline for submitting the application form with the local secretariat in your country/region.**

9. Selection Result Announcement

Selected themes will be posted on the JAXA website, along with the content and the name of the school of the person who proposed it.
https://humans-in-space.jaxa.jp/en/biz-lab/kuoa/tryzerog/
Announcement date: March 2025 (subject to change without prior notice)
*The applicants whose proposal is selected have opportunities to watch the experiment the crew conducts on the ISS and the facility tour of JAXA.

10. Terms of Conditions

Applicants shall be deemed to have agreed to all the following. EU residents must also agree to the contents of the Appendix.

1) Management of Application Content
   a) All rights to modify, implement, and use the results of all submitted ideas for public and educational purposes belong to JAXA. It may also be used in space awareness and utilization activities by the partner company.
   b) Images and videos submitted with your application may be published on the websites of JAXA and related companies.
   c) If there are any provisions that are contrary to these application guidelines, the proposal may be dropped even after it has been announced to be selected.

2) Privacy Policy
   a) The personal information collected will be used for contact purposes, for publicizing the selection results, and for other matters related to the Asian Try Zero-G and Asian cooperation activities.
   b) Footage and photographs of participants and other related parties taken in relation to Asian Try Zero-G may be published on the websites of JAXA and related companies.

3) Responsibilities of the Applicant and JAXA's Disclaimer

a) JAXA shall not be liable for any problems that may occur during participation in this event. The applicant shall be responsible for resolving any possible problems on their own.
b) The applicant must ensure that their proposal does not infringe on any legal rights, such as intellectual property rights. If any legal issues arise in relation to the submitted material, the applicant shall be fully responsible for resolving them.

11. Contact

JAXA Kibo-ABC Secretariat
E-mail: Z-ATZG@ml.jaxa.jp

- Please write "ATZG Inquiry" in the subject line of your email.

Appendix

For the purposes of notification of event information and results of your recruitment, JAXA needs to collect your personal data requested in the present form.
You may at any time object to the use of your data for this purpose by writing to the following address:
Z-ATZG@ml.jaxa.jp

You will find below all the detailed information concerning this processing of your personal data and a reminder of your rights, in application of the legislation in force.
JAXA, willing to respect the privacy and protection of personal data of its prospects and clients, complies with the legislation in force regarding the protection of personal data as data controller, and in particular Law no. 78-17 of 6 January 1978 (the "Data Protection Act") and, from 25 May 2018, Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data and the free movement of such data (the "GDPR").

JAXA does not transfer personal data to third countries or parties outside the European Economic Area.

You have, under the conditions defined by the Data Protection Act and the GDPR, unless otherwise provided:

(i) The right to withdraw at any time your consent to the processing implemented by JAXA based on such consent;
(ii) The right to obtain from JAXA the confirmation that your personal data are or are not processed and, when they are, access to said personal data as well as to several information on the processing (processing purposes, categories of personal data concerned, recipients or categories of recipients to whom your personal data have been or will be communicated, the retention period of the personal data envisaged or, where this is not possible, the criteria used to determine this duration, etc.)
(iii) A right of access, rectification and/or erasure of your personal data;
(iv) The right to receive your personal data provided to JAXA, in a structured, commonly used and legible format, and the right to transfer this data to another data controller without JAXA having to obstruct it;
(v) A right of opposition, for legitimate reasons, to the processing of your personal data and the right of opposition to the use of such personal data;
(vi) The right to request from JAXA the portability of your personal data in the event you wish to obtain the transfer of your personal data to the benefit of another data controller.

You can set, change and revoke at any time guidelines for the retention, erasure and communication of your personal data after your death. You have the right to appoint a third party to whom your data may be communicated after your death. You agree to inform this third party of your approach.
You may exercise the rights described above by writing to JAXA at the following email address:
Z-ATZG@ml.jaxa.jp

Asian Try Zero-G 2025

Attachment-1: Video List

2011 Astronaut Furukawa

Experiment Title	URL	Tool (Attachment)
The Experiment of a Yo-yo in Space	https://jda.jaxa.jp/result.php?lang=e&id=3ecb00d63fc79af9dbfc7672d9b472a3	-
Conservation of Weight	https://jda.jaxa.jp/result.php?lang=e&id=4520cd463ae5e3a03a4eed49f4a1e6eb	Attachment-2, No.5, 8
Soap Bubbles Floating in space	https://jda.jaxa.jp/result.php?lang=e&id=616aab49fb7d20774ba6c09816e3b935	-
Compass	https://jda.jaxa.jp/result.php?lang=e&id=027c98b5d98c0cc438d0cc2463e8a41e	Attachment-2, No.3

2012 Astronaut Hoshide

Experiment Title	URL	Tool (Attachment)
Weight Station	https://www.youtube.com/watch?v=xMJq4v5VQzY 0:00-1:34	Attachment-2, No.6
Effect of gravity on capillary action	https://www.youtube.com/watch?v=xMJq4v5VQzY 1:34-3:13	-
Verification of Inertia	https://www.youtube.com/watch?v=xMJq4v5VQzY 3:13-5:10	Attachment-2, No.1
Liquid Stuck in Straw	https://www.youtube.com/watch?v=xMJq4v5VQzY 5:10-7:00	-
Juggling in Space	https://www.youtube.com/watch?v=xMJq4v5VQzY 7:00-7:48	Attachment-2, No.1
Weight suspended from bar	https://www.youtube.com/watch?v=xMJq4v5VQzY 7:48-8:56	-

2014 Astronaut Wakata

Experiment Title	URL	Tool (Attachment)
Capillarity under zero-gravity	https://jda.jaxa.jp/result.php?lang=e&id=960efc6afd7703ef51eccb827a22363c# 0:00-2:23	Attachment-2, No.7
Growing bubbles in a glass of water	https://jda.jaxa.jp/result.php?lang=e&id=960efc6afd7703ef51eccb827a22363c#	-

	2:23-3:46	
Bernoulli's principle	https://jda.jaxa.jp/result.php?lang=e&id=960efc6afd7703ef51eccb827a22363c# 3:46-7:43	-
Mass and weight comparison center of mass	https://jda.jaxa.jp/result.php?lang=e&id=960efc6afd7703ef51eccb827a22363c# 7:43-12:29	Attachment-2, No.1, 7

2015 Astronaut Yui

Experiment Title	URL	Tool (Attachment)
Spinning a ball on its own axis with one finger	https://jda.jaxa.jp/result.php?lang=e&id=496e0f3e0d734207c7eb6ef91b9a9f64	Attachment-2, No.9
Can we make wind in space?	https://jda.jaxa.jp/result.php?lang=e&id=8f7a4d0c0c981f44ab4a0f45e9098247#	Attachment-2, No.1
The incredible hoop glider!	https://jda.jaxa.jp/result.php?lang=e&id=4dae01ecf2c6ad956c957a7b2700fd6b#	-
Paper ball inside a water ball	https://jda.jaxa.jp/result.php?lang=e&id=844daf0c10ac4137182fdc12343f63e7#	-
Zero-G painting	https://jda.jaxa.jp/result.php?lang=e&id=b618fdd6cd41c87509c50c361802a2f8#	Attachment-2, No.7
Sizable substance set on somersaulting stretched slinky	https://jda.jaxa.jp/result.php?lang=e&id=342aefe980eba18144f65547b86ef977#	Attachment-2, No.2, 4

2016 Astronaut Onishi

Experiment Title	URL	Tool (Attachment)
The Flying Paper Plane	https://jda.jaxa.jp/result.php?lang=e&id=edc947cfea9aab115037268b47df5434	-
Magnus Effect	https://jda.jaxa.jp/result.php?lang=e&id=6d4d7d5229159d6362647b4d752680d6#	Attachment-2, No.2, 13
Blocks in Jar	https://jda.jaxa.jp/result.php?lang=e&id=7d47a857bf08b2fd7bd07b6828b0bcd8#	Attachment-2, No.2
Capillary in Zero Gravity	https://jda.jaxa.jp/result.php?lang=e&id=1032d0dbf7abf05831e4fb0338962186#	Attachment-2, No.14
Liquid Density Action	https://jda.jaxa.jp/result.php?lang=e&id=da6d7e02188aca85c7f547a0801dad4e#	Attachment-2, No.14

Asian Try Zero-G 2025

2018 Astronaut Kanai

Experiment Title	URL	Tool (Attachment)
Paper Boomerang	https://jda.jaxa.jp/result.php?lang=e&id=a67caddd4bc39ab23f0df9ee3ba6ba2d#	-
Aircraft Stability	https://jda.jaxa.jp/result.php?lang=e&id=308a7dc67e07acf5ba820a2224c36ab5#	-
Spinning Ring	https://jda.jaxa.jp/result.php?lang=e&id=bdc5b4dfdfc55b5a9c9aa6f103f51d20#	Attachment-2, No.7
Gyroscope & Tippe Top	https://jda.jaxa.jp/result.php?lang=e&id=abd471ef90d070a886bad210e2f1d122#	Attachment-2, No.11, 12
Wire Top	https://jda.jaxa.jp/result.php?lang=e&id=b0e4b19524fcca8e1a9cb787fe27644a#	Attachment-2, No.20
Balls inside Slinky	https://jda.jaxa.jp/result.php?lang=e&id=023d9bda5849212fe34a39024621ec76#	Attachment-2, No.2, 4, 13
Paper Spring	https://jda.jaxa.jp/result.php?lang=e&id=989bb63650d20b748085b0cab9afc2cc#	Attachment-2, No.1
Double-Layered Liquid Ball	https://jda.jaxa.jp/result.php?lang=e&id=58980b07704754cea5a63e23db4bf1bc#	-

2022 Astronaut Wakata

Experiment Title	URL	Tool (Attachment)
Rotation of 'Dumbbell-shaped' objects in Space	https://jda.jaxa.jp/result.php?lang=e&id=2ca9eff2f38e615cf24a7bcc9c03620c	Attachment-2, No.15
The Water Vortex in Zero Gravity Condition	https://jda.jaxa.jp/result.php?lang=e&id=2a6af73a4a57fe78e72eb0ce46aad532	-
Double Pendulum in space	https://jda.jaxa.jp/result.php?lang=e&id=02243e3ae16e33fad865eb1246212bc2	-
Self-assembly of granular gas and three-dimensional pattern formation in a microgravity environment	https://jda.jaxa.jp/result.php?lang=e&id=ca7f57030f70df5aa648b2b9265d5793	-
Study of the height of water which is risen up in microgravity	https://jda.jaxa.jp/result.php?lang=e&id=cf01555be386403aaddfd6a3d26bf99f	-
Water sphere disturbance in zero gravity	https://jda.jaxa.jp/result.php?lang=e&id=287232f0b0991fb1dd66308361e7cd33	-

2023 Astronaut Furukawa

Experiment Title	URL	Tool (Attachment)

Asian Try Zero-G 2025

Twist Athlete Robot Experiment	https://jda.jaxa.jp/result.php?lang=e&id=b27788763ac22beba879023fd713c045	Attachment-2, No.21
Stranger things two ball on string	https://jda.jaxa.jp/result.php?lang=e&id=4195d183a19daaad45e6be3af63e976e	Attachment-2, No.24
Lato-Lato motion trials in zero gravity Try a total elastic collision in space using the Lato-Lato game	https://jda.jaxa.jp/result.php?lang=e&id=98ad1efd0c6d6f6977466dc100f52b3f	Attachment-2, No.26, 27
Finding the shape of Magnetic Field Lines	https://jda.jaxa.jp/result.php?lang=e&id=c99f9f57f0f19a2af9eebd6e0da931d7	Attachment-2, No.28
Magnus Glider Looping Phase in Microgravity Behaviors of the magnus effect in zero-gravity	https://jda.jaxa.jp/result.php?lang=e&id=babbc55c217ed61a51c486d19dcd7085	Attachment-2, No.29, 30
Water Spheres and Electrostatic Force	https://jda.jaxa.jp/result.php?lang=e&id=2cd97b46830cdc0c3c278c56169a96ee	Attachment-2, No.32, 33
Oloid's Movement in Microgravity	https://jda.jaxa.jp/result.php?lang=e&id=e8ffb8ac29cd49568b02b33452ee2fe1	-
Acceleration of liquid surface in capillary action in microgravity	https://jda.jaxa.jp/result.php?lang=e&id=f9dc4b24a605cfefb6f5c44c6795e412	Attachment-2, No.35
Zero-G Siphon	https://jda.jaxa.jp/result.php?lang=e&id=169bc577d8d4faf39cf4a229b1223bdb	Attachment-2, No.35, 36
Let us blow (exercise)	https://jda.jaxa.jp/result.php?lang=e&id=6d156d6c8b6625976efb4970a61ef42d	Attachment-2, No.37, 38
Flexibility exercises with rope (exercise)	https://jda.jaxa.jp/result.php?lang=e&id=bd1a756bcd3e0f9bac6fcebe5b160b47	-
The Effectivity of Elastic Resistance Band Exercise When Performed in Zero-Gravity (exercise)	https://jda.jaxa.jp/result.php?lang=e&id=69dce16cbdc9b8aee6b1e3e7a22c3e92	-
Starfish exercise for Microgravity (exercise)	https://jda.jaxa.jp/result.php?lang=e&id=11079bfe25b8659cfc9677c008ceb2a2	-
Rubber gymnastics on air chair (exercise)	https://jda.jaxa.jp/result.php?lang=e&id=ae0173129ad521ccfcd8d982278f0d2d	-

Summary of Asian Try-Zero-G videos

- 2018 (Astronaut Kanai)
- 2022 (Astronaut Wakata)
- 2023 (Astronaut Furukawa)

Other videos

Asian Try Zero-G 2025

- 2009 (Astronaut Wakata)*1
- 2010 (Astronaut Noguchi①, ②) *1
- 2014 (Astronaut Wakata) *1
- 2016 (Astronaut Onishi①, ②, ③, ④, ⑤, ⑥)*2

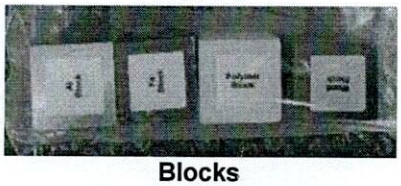
*1: Japanese audio with English subtitles

*2: Japanese audio only

Asian Try Zero-G 2025

Attachment-2: Available Items (1/13)

No.1



Blocks
Weight Kit (Blocks)

Material
Aluminum, Steel, Polymer, Wood

Size
L 30 x W 30 x H 30 [mm]

Mass
Aluminum : 73 [g]
Steel : 210 [g]
Polymer : 38 [g]
Wood : 12 [g]

Quantity
1 set

Reference
- Astronaut Hoshide, 2012 (3:13-5:10, 7:00-7:48)
- Astronaut Wakata, 2014 (7:43-12:29)
- Astronaut Yui, 2014
- Astronaut Kanai, 2018

No.2

Mass Comparison Kit (Balls)

Material
Aluminum, Polyethylene, Vinyl, Rubber, Wood, Steel

Size
dia. 27 [mm]

Mass
Aluminum : 40 [g]
Polyethylene : 14 [g]
Vinyl : 20 [g]
Rubber : 21 [g]
Wood : 9 [g]
Steel : 110 [g]

Quantity
2 sets

Reference
- Astronaut Yui, 2015
- Astronaut Onishi, 2016
- Astronaut Onishi, 2016
- Astronaut Kanai, 2018

No.3

Compass

Material
Aluminum

Size
L 73 x W 54 x H 23 [mm]

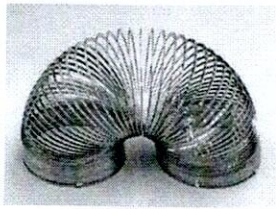
Mass
66 [g]

Quantity
1

Reference
Astronaut Furukawa, 2011

Attachment-2: Available Items (2/13)

No.4



Slinky

Material
Steel

Size
dia. 40 x L 32 [mm]
(Inside dia. 37 [mm])

Mass
46 [g]

Quantity
1

Reference
- Astronaut Yui, 2015
- Astronaut Kanai, 2018

No.5

Spring Kit (Springs, Weights)

Material
Steel

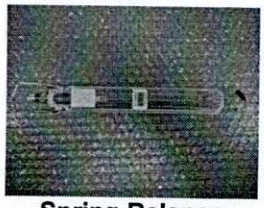
Size
Large Spring : dia. 14 x L 91 [mm]
Medium Spring : dia. 9 x L 75 [mm]
Small Spring : dia. 5 x L 46 [mm]
Weight : dia. 20 x L 9 [mm]
(include hooks: L 29 x W 20 x H 20 [mm])

Mass
Large Spring : 17 [g]
Medium Spring : 6 [g]
Small Spring : 1.25 [g]
Weight : 25 [g]

Quantity
1 set (Spring: each 1, Weight: 3)

Reference
Astronaut Furukawa, 2011

No.6



Spring Balance

Material
Case: Acrylic resin, Spring: Steel

Size
L 30 x W 250 x H 20 [mm]

Mass
69 [g]

Quantity
1

Reference
- Astronaut Hoshide, 2012 (0:00-1:34)

Asian Try Zero-G 2025

Attachment-2: Available Items (3/13)

No.7

Ink Brush

Material
Polyester

Size
L 234 x W 9 x H 5 [mm]

Mass
5 [g]

Quantity
1

Reference
- Astronaut Wakata, 2014 (0:00-2:23, 7:43-12:29)
- Astronaut Yui, 2015
- Astronaut Kanai, 2018

No.8

Origami Paper

Material
Paper

Size
L 150 x W 150 x H 0.1 [mm]

Mass
1 [g]

Quantity
3 sets

Reference
Astronaut Furukawa, 2011

No.9

Star Chart

Material
Plastic

Size
L 273 x W 276 x H 1 [mm]

Mass
68 [g]

Quantity
1

Reference
- Astronaut Yui, 2018

Attachment-2: Available Items (4/13)

No.10

Tape measure

Material
Case: Plastic, Tape: Vinyl

Size
L 52 x W 52 x H 17 [mm]
(Tape length: 1.5 [m])

Mass
27 [g]

Quantity
1

No.11

Tppe Top

Material
Wood

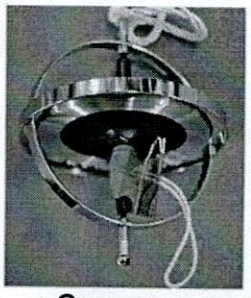
Size
dia. 26 x L 34 [mm]

Mass
8 [g]

Quantity
2

Reference
Astronaut Kanai, 2018

No.12



Gyroscope

Material
Steel

Size
dia. 61 x L 87 [mm]
(Thread length: 500 [mm])

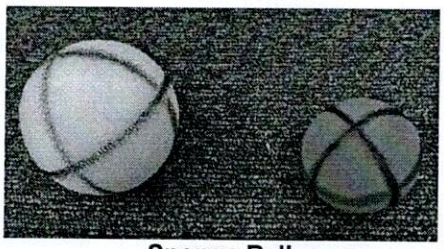
Mass
80 [g]

Quantity
2

Reference
Astronaut Kanai, 2018

Attachment-2: Available Items (5/13)

No.13



Sponge Ball

Material
Polyurethane

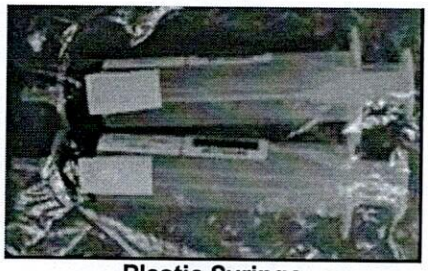
Size
Yellow: dia. 75 [mm]
Orange 1: dia. 50 [mm]
Orange 2 : dia. 26 [mm]

Mass
Yellow: 6.3 [g]
Orange 1 : 1.2 [g]
Orange 2: 0.22 [g]

Quantity
Yellow: 1
Orange 1 : 1
Orange 2: 2

Reference
- Astronaut Onishi, 2016
- Astronaut Kanai, 2018

No.14



Plastic Syringe

Material
Plastic

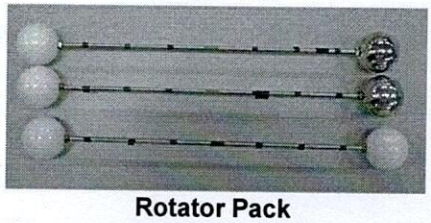
Size
30ml: L 139 x W 40 D 29 [mm]
50ml : L 144 x W 47 D 35 [mm]

Mass
30ml : 20 [g]
50ml : 24 [g]

Quantity
30ml :2
50ml :5

Reference
- Astronaut Onishi, 2016
- Astronaut Onishi, 2016

No.15



Rotator Pack
(Weights attached bar's both ends)

Material
Bar: Steel,
Ball: Plastic , Aluminum, Brass

Size
dia. 30 x L 267 [mm]

Mass
Plastic – Plastic : 52 [g]
Plastic – Aluminum: 73 [g]
Plastic – Brass : 151 [g]

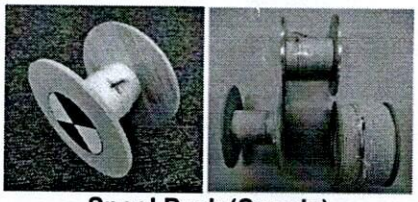
*Individual Mass
Bar : 14 [g]
Plastic Ball : 19 [g]
Aluminum Ball: 40 [g]
Brass Ball : 118 [g]

Quantity
3

Reference
- Astronaut Wakata, 2022

Attachment-2: Available Items (6/13)

No.16



Spool Pack (Spools)

Material
Wood, Aluminum, Cotton

Size
dia. 90 x L 56 [mm]

Mass
Wood : 45 [g]/123 [g] (thick roll)
Aluminum : 129 [g]

Quantity
3

No.17

Parachute Pack (Parachute, Weights)

Material
Parachute: Nylon
Weight: Wood and Brass

Size
Parachute : dia. 430 x L 430 [mm]
Wood Weight : dia. 30 x L 45 [mm]
Brass Weight : dia. 30 x L 45 [mm]

Mass
Parachute : 19 [g]
Wood Weight : 14 [g]
Brass Weight : 123 [g]

Quantity
1 set

No.18

Flapping Bird

Material
Plastic

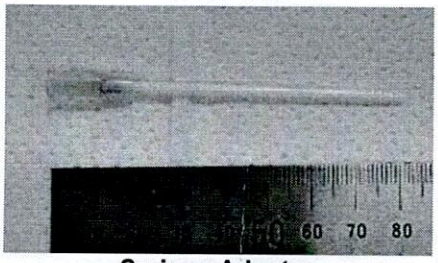
Size
L 260 x W 160 x H 40 [mm]

Mass
11 [g]

Quantity
1

Attachment-2: Available Items (7/13)

No.19



Syringe Adapter

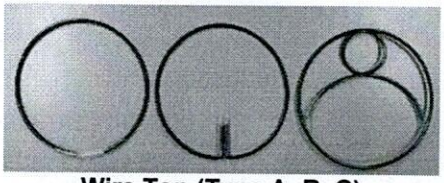
Material
Plastic

Size
L 82 x W 8 x D 6 [mm]

Mass
0.4 [g]

Quantity
2

No.20



Wire Top (Type A, B, C)

Material Copper

Size Wire: 2 [mm]
Type A: dia. 81 x H 2.1 [mm]
Type B: dia. 81 x H 4.8 [mm]
Type C: dia. 83 x H 3.8 [mm]

Mass
Type A: 6.49 [g]
Type B: 8.11 [g]
Type C: 11.87 [g]

Quantity
1 set

Reference
Astronaut Kanai, 2018

No.21

Acrylic Stick experiment kit

Material
Acrylic, Crude rubber

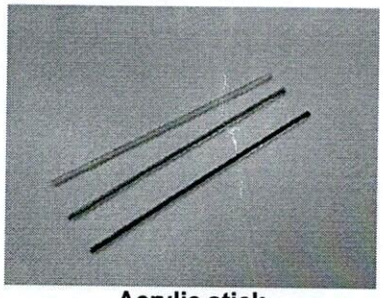
Size
L 250 x W 250 x H 17 [mm]

Mass
17 [g]

Reference
Astronaut Furukawa, 2023

Attachment-2: Available Items (8/13)

No.22



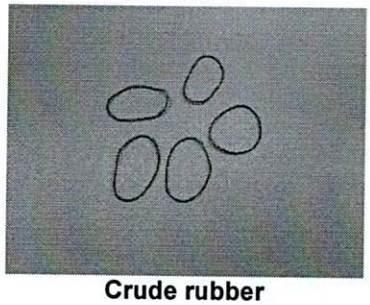
Acrylic stick

Material
Acrylic

Size
L 250 x W 6 x H 6 [mm]

Mass
8.5 [g]

No.23



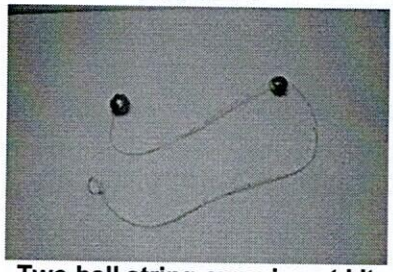
Crude rubber

Material
Crude rubber

Size
L 50 x W 50 x H 2 [mm]

Mass
0.2 [g]

No.24



Two ball string experiment kit

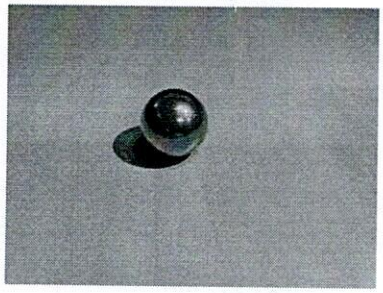
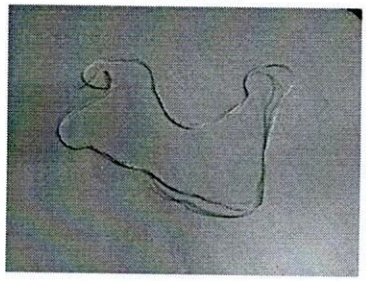
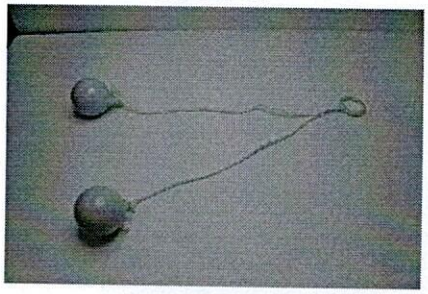
Material
Aluminum, Nomex

Size
L 20 x W 645 x H 20 [mm]

Mass
24 [g]

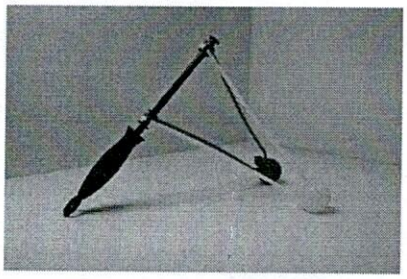
Reference
Astronaut Furukawa, 2023

Attachment-2: Available Items (9/13)

No.25	No.26	No.27
		
Aluminum ball Material Aluminum Size L 20 x W 20 x H 20 [mm] Mass 11 [g]	**Nomex rope** Material Nomex Size L 1000 (As required) x W 3 x H 0.5 [mm] Mass 1.5 [g] Reference Astronaut Furukawa, 2023	**Rope clackers** Material Plastic Size L 47 x W 549 x H 47 [mm] Mass 60 [g] Reference Astronaut Furukawa, 2023

Attachment-2: Available Items (10/13)

No.28



Stick clackers

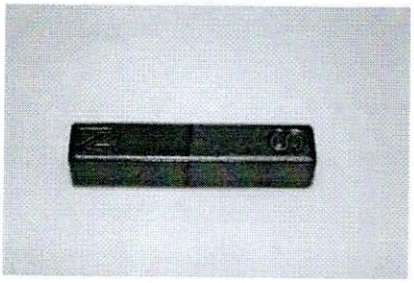
Material
Plastic

Size
L 180 x W 550 x H 25 [mm]

Mass
24 [g]

Reference
Astronaut Furukawa, 2023

No.29



Magnet

Material
Magnet

Size
L 50 x W 9 x H 9 [mm]

Mass
24 [g]

Reference
Astronaut Furukawa, 2023

No.30

Magnus Glider experiment kit (cup)

Material
Paper

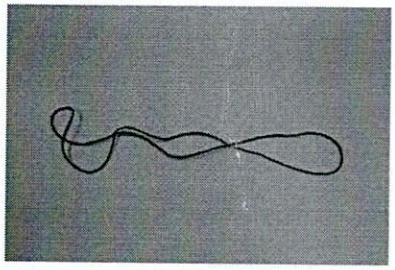
Size
L 80 x W 240 x H 80 [mm]

Mass
17 [g]

Reference
Astronaut Furukawa, 2023

Attachment-2: Available Items (11/13)

No.31



Magnus Glider experiment kit (Crude rubber)

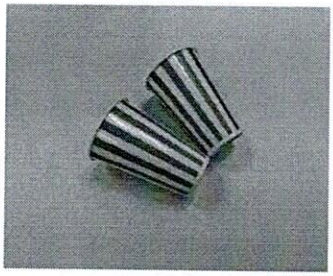
Material
Crude rubber

Size
L 1 x W 225 x H 2 [mm]

Mass
0.5 [g]

Reference
Astronaut Furukawa, 2023

No.32



Cup

Material
Paper

Size
L 80 x W 120 x H 80 [mm]

Mass
8 [g]

No.33

Colored water bag

Material
PVC

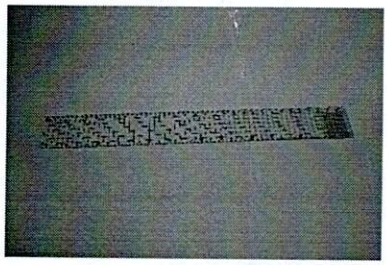
Size
L 250 x W 130 x H 2 [mm]

Mass
237 [g]

Reference
Astronaut Furukawa, 2023

Attachment-2: Available Items (12/13)

No.34



Ruler

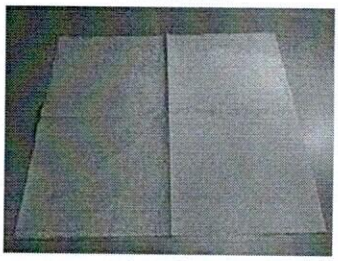
Material
Acrylic

Size
L 35 x W 311 x H 4 [mm]

Mass
27 [g]

Reference
Astronaut Furukawa, 2023

No.35



Lint free wipe

Material
Paper

Size
L 325 x W 385 x H 1 [mm]

Mass
9.3 [g]

No.36

Colored Water Container

Material
Polyethylene, colored water

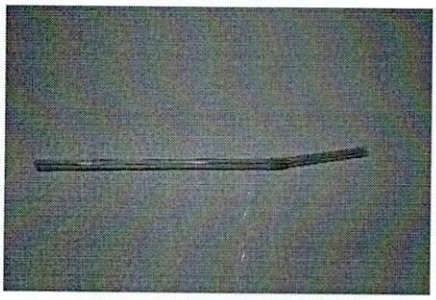
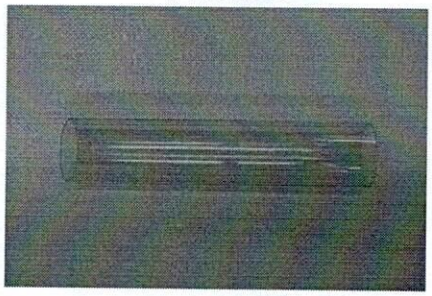
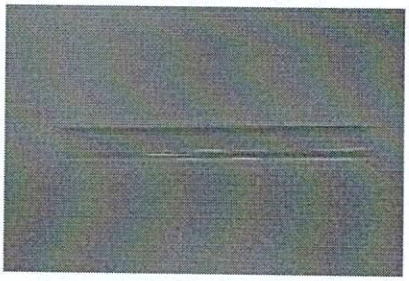
Size
L 50 x W 50 x H 60 [mm]

Mass
91 [g]

Reference
Astronaut Furukawa, 2023
Astronaut Furukawa, 2023

Asian Try Zero-G 2025

Attachment-2: Available Items (13/13)

No.37	No.38	No.39
		
Straw	**3 cm pipe**	**1 cm pipe**
Material Plastic Size L 50 x W 50 x H 60 [mm] Mass 0.3 [g] Reference Astronaut Furukawa, 2023	Material Acrylic Size L 150 x W 32 x H 32 [mm] Mass 19 [g] Reference Astronaut Furukawa, 2023	Material Acrylic Size L 150 x W 12 x H 12 [mm] Mass 7 [g] Reference Astronaut Furukawa, 2023

Asian Try Zero-G 2025　Proposal Form　(Attachment-3)

ID (for office use only)

1. Applicant Information

Experiment Title		
Personal information/ (Team Leader)	Name	
	Nationality	
	Age	
	Gender (M/F/X)	
	School	
	Major (if applicable)	
	E-mail	

Member List (if you apply with a group)

Personal information	Name	
	Nationality	
	Age	
	Gender (M/F/X)	
	School	
	Major (if applicable)	
	E-mail	
Personal information	Name	
	Nationality	
	Age	
	Gender (M/F/X)	
	School	
	Major (if applicable)	
	E-mail	
Personal information	Name	
	Nationality	
	Age	
	Gender (M/F/X)	
	School	
	Major (if applicable)	
	E-mail	

If you have more members, please add the list on the next page.

Photo

Asian Try Zero-G 2025　Proposal Form　(Attachment-3)

Please attach your/group photo if you wish to participate in the photo session. The image/picture will be open to the public and broadcast.	

☐ I agree to the Terms and Conditions indicated in the Asian Try Zero-G 2025 Entry Guideline

☐ I am not from the EU and do not live in the EU,

☐ I reside or am from the EU and agree to GDPR in Entry Guideline (check if applicable)

*Check is needed to send proposal, if applicable.

2. Abstract (200 words)

3. Hypothesis and Theory

- Hypothesis

- Schematic Model

- Mathematical and Theoretical Hypothesis (If applicable)

4. Verification Methods and Procedures

- Overview of the Verification Methods

- Show step by step procedures and expected time.

No	Procedure	Time* (minutes)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
	Total	

* The time required for operations on orbit is about **twice as long** as the time required for the same operations on the ground.

Add lines here as needed.

NOTE (If applicable):

(A video explanation is best if there are.)

Show the URL storing a video for sharing	

5. Tools and Items

- Tools and Items from Attachment-2

(Write to identify what is in Attachment-2 and amount/number pcs)

Asian Try Zero-G 2025　Proposal Form (Sample)　(Attachment-4)

ID (for office use only)

1. Applicant Information

Experiment Title		
Personal information/ (Team Leader)	**Name**	Hanako Tsukuba
	Nationality	Japan
	Age	14
	Gender (M/F/X)	F
	School	Southern Ibaraki Junior High School
	Major (if applicable)	N/A
	E-mail	xxxxxxxx@xxxxx

Member List (if you apply with a group)

Personal information	**Name**	Jiro Ibaraki
	Nationality	Japan
	Age	14
	Gender (M/F/X)	M
	School	Southern Ibaraki Junior High School
	Major (if applicable)	N/A
	E-mail	xxxxxxxx@xxxxx
Personal information	**Name**	Sakura Ibaraki
	Nationality	Japan
	Age	12
	Gender (M/F/X)	F
	School	Southern Ibaraki Junior High School
	Major (if applicable)	N/A
	E-mail	xxxxxxxx@xxxxx
Personal information	**Name**	
	Nationality	
	Age	
	Gender (M/F/X)	
	School	
	Major (if applicable)	
	E-mail	

If you have more members, please add the list on the next page.

Asian Try Zero-G 2025　Proposal Form (Sample)　(Attachment-4)

Photo

Please attach your/group photo if you wish to participate in the photo session. The image/picture will be open to the public and broadcast.	

☒ I agree to the Terms and Conditions indicated in the Asian Try Zero-G 2025 Entry Guideline

☒ I am not from the EU and do not live in the EU,

☐ I reside or am from the EU and agree to GDPR in Entry Guideline (check if applicable)
*Check is needed to send proposal, if applicable.

2. Abstract (200 words)

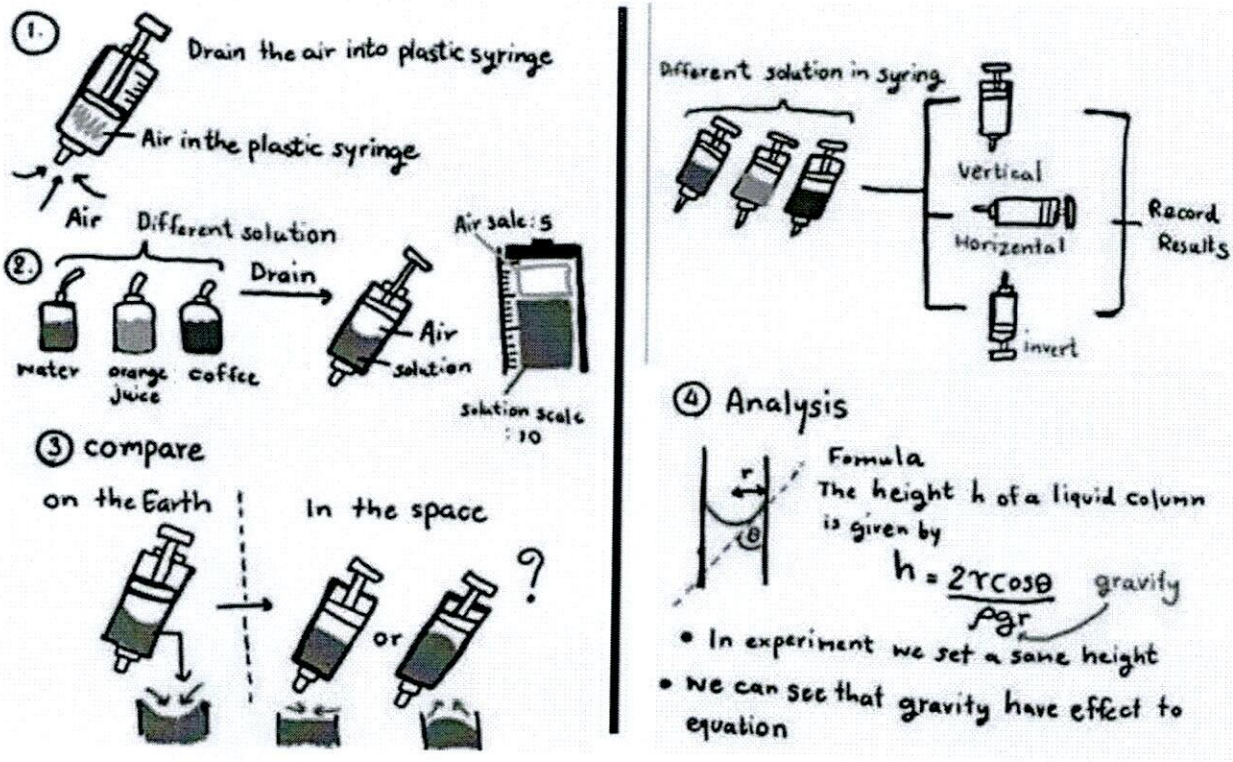
The purpose of this experiment is to analyze the difference in capillary action between the microgravity condition on the ISS and the normal gravity condition on the ground. Since water in a tube has surface tension with surface adhesion force and cohesion force, we can see in daily life that the water surface is concave down. It's called capillary action. And gravity is said to be one of the variables that can affect capital action. Therefore, in this experiment, we will fill a small plastic syringe-like tube with water, observe the water surface in a microgravity condition, and compare it with the experiment on the ground to investigate how the gravity affects the capillary phenomenon. As a result of this experiment, we expect the water surface to be parallel or convex rather than concave in a microgravity environment because the effect of gravity is less pronounced.

3. Hypothesis and Theory

- Hypothesis

Surface tension is the force which makes fluid surface acquired the least area possible. Its direction is parallel with fluid surface and perpendicular with the edge of surface is act by force in any direction. In molecules at the surface is act by force in only under direction. So, that made fluid have surface force act into center. We can see it normally in daily life when we drain water into tube. Then, water surface is concave down because water in tube have surface tension with surface adhesion force and cohesion force. It's call capillary action. And gravity is also one of variable that can affect to capitally action. So, I think that if we drain water into a small tube such as plastic syringe and then observe it in zero gravity condition how difference of surface by compare with a syringe in normal gravity condition.

- Schematic Model



- Mathematical and Theoretical Hypothesis (If applicable)

The height of liquid column is given by

$h = 2\gamma\cos\theta/r\rho g$

we can apply this equation to find θ

γ is the liquid-air surface tension (energy/area)

θ is the contact angle

ρ is the density of liquid (mass/volume)

g is acceleration due to gravity (length/time^2)

r is radius of tube (length)

4. Verification Methods and Procedures

- Overview of the Verification Methods

Compare and analysis syringe in zero gravity condition and compare contact angle(θ) from equation with contact angle from experiment.

- Show step by step procedures and expected time.

No	Procedure	Time*(minutes)
1	Drain air into three syringes to 5 ml scale	1

2	Drain water or other liquids into syringes to 10 ml scale	3
3	Observe them and take photos and videos	6
4	Measure contact angle and compare with syringe in normal condition (activity on ground)	
5		
6		
7		
8		
9		
10		
	Total	10

* The time required for operations on orbit is about **twice as long** as the time required for the same operations on the ground.

Add lines here as needed.

NOTE (If applicable):
If available to use one syringe, please repeat step 1-3. It will take more time.

(A video explanation is best if there are.)

Show the URL storing a video for sharing	

5. Tools and Items

- Tools and Items from Attachment 2

(Write to identify what is in Attachment 2 and amount/number pcs)

- Item No.1, Aluminum Wood block 1pcs
- Item No.11, Tippe Top 2pcs
- Item No.20, Wire Top (Type A)